

Control Strategies – Mobile Source

M1 TSI OBD/3-year exemption, then biennial

Assumes the implementation of a vehicle inspection and maintenance program in Box Elder, Cache, and Tooele counties, including two-speed idle (TSI) and on-board diagnostics II (OBD II) testing. New vehicles would be exempt from testing for the first three years, followed by biennial testing.

M2 RVP reduced from 13.1 to 12.1 PSI

Assumes a one pound per square inch (PSI) reduction in the Reid vapor pressure (RVP) of gasoline, thereby making the fuel less volatile and helping to reduce VOC emissions.

M3 Voluntary and emerging mobile source bundle

This item represents a bundle of various voluntary and emerging mobile source control measures. Examples of such measures include, but are not limited to:

- trip reduction programs
- alternative fuels
- diesel retrofits
- episode-triggered/inversion-specific measures

This bundle is limited by EPA guidance to 3 percent of the total reduction required to achieve attainment in a planning year. For the purposes of this exercise, DAQ assumed the maximum credit allowed by EPA guidance for this bundle. The actual composition of this bundle (i.e. the measures ultimately included), responsibility for implementation, funding sources, statutory or rule-making requirements, and other details have not yet been specified and would need to be developed in consultation with relevant agencies, authorities, and stakeholders.

Control Strategies – Area Source

A1 Expand R307-302, Residential Fireplaces and Stoves

- Expand current rule to all PM2.5 nonattainment counties.
- Red day burning restriction cut point reduced from 35 to 25 ug/m³. About 10-20 additional red days.
- Require Phase 2 certified stoves and restrict re-sale of non-certified stoves.
- Ban outdoor wood boilers that contribute direct PM2.5. Stack temperatures in these units are too low to disperse emissions.

Reduction: VOC, PM2.5, NOx, SOx

A2 Expand R307-309, Fugitive Emissions and Fugitive Dust

- Rule presently regulates fugitive dust control requirements in Salt Lake and Utah Counties and the City of Ogden.
- Applies to all building and road construction, mining and sand & gravel processes.

- Rule requires filing of dust control plan when soil disturbance for area greater than ¼ acre.
- Expand rule to include Box Elder, Cache, Davis, Tooele and Weber Counties.

Reduction: PM2.5

A3 Expand R307-335, Degreasing to Apply Beyond Ozone Nonattainment Area

- Degreasing operations/surface cleaning controls. VOC emissions reduction by the use of low-VOC content solvents and by changes in operating practices.
- Expand current rule to all PM2.5 nonattainment counties.
- Add industrial solvent cleaning component to rule that deals with non–tank type of degreasing.

Reduction: VOC

A4 Expand R307-340, Surface Coating to Apply Beyond Ozone Nonattainment Area

- Surface coating operations on varied media. Control VOC emission.
- Rule presently regulates in Salt Lake and Davis Counties. Expand to include Box Elder, Cache, Tooele, Utah and Weber Counties.
- Low solvent substitution or engineering control.
- Rule applies to appliance, paper, film and foil, metal furniture, magnet wire, flat wood, graphic arts and miscellaneous metal parts.

Reduction: VOC

A5 R307-340, Add Categories to Current Surface Coating Rule

- Not presently included in surface coating rule- architectural coating (paint and exterior compounding) and sheet, strip and coil.
- Proposal to amend rule to include for all nonattainment counties.

A6 Expand R307-343, Wood Furniture Manufacturing to Apply Beyond Ozone Nonattainment

Use of solvents in manufacturing process. Low solvent substitution or engineering control.

Reduction: VOC

A7 New Rule - Consumer Use Adhesive & Sealants

Require use of waterborne, hot melt and other types of adhesives in consumer products.

Reduction: VOC

A8 New Rule – Yeast Products

Regulate yeast leavening products in large to medium sized bakeries

Reduction: VOC

A9 New Rule – Restaurants

Meat cooked on charbroilers release PM2.5 and VOC. Place controls on all chain-driven charbroilers and controls on larger kitchens cooking on underfire charbroilers, grills, fryers etc.

Reduction: PM2.5 and VOC

A 10 New Rule - Automobile Refinishing

Paint stripping and miscellaneous surface coating operations.

Reduction: VOC

Control Strategies – Voluntary Stationary

S1 Voluntary and emerging stationary source bundle

This item represents a bundle of various voluntary and emerging stationary source control measures. Examples of such measures include, but are not limited to:

- retail entity sales agreements regarding high-VOC emitting products
- consumer programs aimed at reducing the use of high-emitting paints
- deferring or reducing consumer/industry maintenance
- observing best operating practices

This bundle is limited by EPA guidance to 6 percent of the total reduction required to achieve attainment in a planning year. For the purposes of this exercise, DAQ assumed the maximum credit allowed by EPA guidance for this bundle. The actual composition of this bundle (i.e. the measures ultimately included), responsibility for implementation, funding sources, statutory or rule-making requirements, and other details have not yet been specified and would need to be developed in consultation with relevant agencies, authorities, and stakeholders.

Control Strategies – Point Source

P1 5% reduction from projected actual point source emissions

- Emission reductions from industrial point sources achieved through Reasonably Available Control Technology (RACT)
- 35 “large” point sources within the 3 nonattainment areas
- A “large” point source had emissions of 100 tons of PM2.5 (or one of its precursors) in 2008 OR is permitted such that it could emit 100 tons in any given year
- Each of these sources is presently under review by DAQ to see that RACT is applied

Part of this process is quantifying the emission reduction concepts for each of the projection years, and this work is still ongoing. Therefore, current modeling predictions still contain only an estimate for what these reductions will ultimately be. The estimate reflected in these modeling results is a 5% reduction in the actual emissions of PM2.5 and VOC from these large point sources.

DAQ recognizes that there are other precursors to PM_{2.5}, and that RACT will also target these precursors, but the model is most sensitive to PM_{2.5} and VOC so the estimate was limited to these pollutants for now.

It is also important to keep in mind that many of the area source controls identified above (e.g. Degreasing, Surface Coating, and Wood Finishing) will actually apply to point sources that were not large enough to warrant individual attention.

APPENDIX A: Summary of Control Strategies by Nonattainment Area**Table 1 – Logan Emissions Reduction by Control Strategy (% of Total Inventory)**

| Strategy | 2014 | | | | 2019 | | | |
|--|------|-------|-----|-----|------|-------|-----|-----|
| | VOC | PM2.5 | NOX | SOX | VOC | PM2.5 | NOX | SOX |
| M1 OBD and TSI/3-year exemption, then biennial | 2.3 | - | 3.5 | - | 1.8 | - | 3.6 | - |
| M2 RVP reduced from 13.1 to 12.1 PSI | 0.5 | - | 0.4 | - | 0.3 | - | 0.3 | - |
| M3 voluntary and emerging mobile source bundle | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 |
| A1 fireplace/wood stoves burning restriction (red day) cut point at 25 ug/m ³ | 0.6 | 3.0 | * | 0.2 | 0.8 | 4.2 | 0.1 | 0.4 |
| A2 fugitive dust control | - | 1.5 | - | - | - | 1.5 | - | - |
| A3 degreasing operations | 0.2 | - | - | - | 0.2 | - | - | - |
| A4 surface coating industries | 2.0 | - | - | - | 2.4 | - | - | - |
| A5 surface coating-additional categories | 1.5 | - | - | - | 1.8 | - | - | - |
| A6 wood manufacturing | 0.3 | - | - | - | 0.4 | - | - | - |
| A7 new rule - consumer use adhesive & sealants | 0.6 | - | - | - | 0.7 | - | - | - |
| A8 new rule – yeast products | 0.3 | - | - | - | 0.4 | - | - | - |
| A9 new rule – restaurants | 0.2 | 7.0 | - | - | 0.1 | 8.9 | - | - |
| A10 new rule – automobile refinishing | 0.3 | - | - | - | 0.4 | - | - | - |
| S1 voluntary and emerging stationary source bundle | 0.5 | 0.8 | 0.1 | 0.3 | 0.5 | 0.9 | 0.1 | 0.3 |
| P1 5% reduction from projected actual point source emissions | 0.3 | 0.1 | - | - | 0.3 | - | - | - |

*Less than 0.05%

Table 2 – Provo-Orem Emissions Reduction by Control Strategy (% of Total Inventory)

| Strategy | 2014 | | | | 2019 | | | |
|--|------|-------|-----|-----|------|-------|-----|-----|
| | VOC | PM2.5 | NOX | SOX | VOC | PM2.5 | NOX | SOX |
| M1 OBD and TSI/3-year exemption, then biennial | - | - | - | - | - | - | - | - |
| M2 RVP reduced from 13.1 to 12.1 PSI | 0.6 | - | 0.4 | - | 0.4 | - | 0.3 | - |
| M3 voluntary and emerging mobile source bundle | 0.4 | 0.2 | 0.2 | 0.4 | 0.3 | 0.2 | 0.3 | 0.5 |
| A1 fireplace/wood stoves burning restriction (red day) cut point at 25 ug/m ³ | - | * | - | - | - | * | - | - |
| A2 fugitive dust control | - | 0.1 | - | - | - | 0.1 | - | - |
| A3 degreasing operations | 0.1 | - | - | - | 0.1 | - | - | - |
| A4 surface coating industries | 0.9 | - | - | - | 1.1 | - | - | - |
| A5 surface coating-additional categories | 2.5 | - | - | - | 3.0 | - | - | - |
| A6 wood manufacturing | 0.4 | - | - | - | 0.5 | - | - | - |
| A7 new rule - consumer use adhesive & sealants | 0.9 | - | - | - | 1.0 | - | - | - |
| A8 new rule – yeast products | 0.5 | - | - | - | 0.5 | - | - | - |
| A9 new rule – restaurants | 0.3 | 7.6 | - | - | 0.2 | 9.6 | - | - |
| A10 new rule – automobile refinishing | 0.3 | - | - | - | 0.4 | - | - | - |
| S1 voluntary and emerging stationary source bundle | 1.3 | 1.6 | 0.2 | 0.5 | 1.5 | 1.9 | 0.2 | 0.3 |
| P1 5% reduction from projected actual point source emissions | 0.1 | 0.4 | - | - | 0.1 | 0.4 | - | - |

*Less than 0.05%

Table 3 – Salt Lake-Ogden-Clearfield Emissions Reduction by Control Strategy (% of Total Inventory)

| Strategy | 2014 | | | | 2019 | | | |
|--|------|-------|-----|-----|------|-------|-----|-----|
| | VOC | PM2.5 | NOX | SOX | VOC | PM2.5 | NOX | SOX |
| M1 OBD and TSI/3-year exemption, then biennial | 0.3 | - | 0.5 | - | 0.2 | - | 0.4 | - |
| M2 RVP reduced from 13.1 to 12.1 PSI | 0.5 | - | 0.3 | - | 0.3 | - | 0.2 | - |
| M3 voluntary and emerging mobile source bundle | 0.4 | 0.2 | 0.2 | 0.1 | 0.3 | 0.2 | 0.2 | 0.1 |
| A1 fireplace/wood stoves burning restriction (red day) cut point at 25 ug/m ³ | * | * | - | - | * | * | - | - |
| A2 fugitive dust control | - | 0.4 | - | - | - | 0.5 | - | - |
| A3 degreasing operations | * | - | - | - | 0.1 | - | - | - |
| A4 surface coating industries | 0.2 | - | - | - | 0.2 | - | - | - |
| A5 surface coating-additional categories | 2.3 | - | - | - | 2.8 | - | - | - |
| A6 wood manufacturing | 0.1 | - | - | - | 0.2 | - | - | - |
| A7 new rule - consumer use adhesive & sealants | 0.6 | - | - | - | 0.7 | - | - | - |
| A8 new rule – yeast products | 0.3 | - | - | - | 0.4 | - | - | - |
| A9 new rule – restaurants | 0.2 | 5.3 | - | - | 0.1 | 6.6 | - | - |
| A10 new rule – automobile refinishing | 0.4 | - | - | - | 0.5 | - | - | - |
| S1 voluntary and emerging stationary source bundle | 1.1 | 1.3 | 0.4 | 0.9 | 1.2 | 1.6 | 0.4 | 0.9 |
| P1 5% reduction from projected actual point source emissions | 0.4 | 1.3 | - | - | 0.4 | 1.5 | - | - |

*Less than 0.05%

APPENDIX B: Interactive Data Explorer Information

The Interactive Data Explorer may be found at the following web address:

<http://www.airquality.utah.gov/Public-Interest/Current-Issues/pm2.5/presentations/index.html>

For more information on this resource, please contact Chris Pennell (DAQ) at 801-536-4098 or cpennell@utah.gov.